



MEMORANDUM

February 14, 2011

To: Honorable Candice S. Miller
Attention: Kyle T. Burleson

From: Rawle O. King, Analyst in Financial Economics and Risk Assessment, 7-5975

Subject: **Analysis of Flood Insurance Premiums Written Versus Claims for Michigan, Florida, and Louisiana Under the National Flood Insurance Program: 1978-2010**

This memorandum responds to your request for an analysis of flood insurance premiums and claims for Michigan, Florida, and Louisiana under the National Flood Insurance Program (NFIP). Based on data provided by the Federal Emergency Management Agency, CRS calculated premium-to-claims ratios for Michigan, Florida, and Louisiana. The ratio shows the relationship between premiums and claims: a ratio of more than 1 indicates more premiums were collected than claims paid in a given year; a ratio of less than 1 indicates that claims exceeded premiums.

Data

Table 1 shows NFIP premium and claims data and computes premiums-to-claims ratios for these three states. According to FEMA, NFIP policyholders in Michigan paid \$284.4 million in premiums and received \$45.0 million in claims over the period from 1978 through 2010. In other words, Michigan policyholders paid 6.32 times the dollars in premiums into the NFIP than they collected in claims over this period. Florida policyholders paid \$14.1 billion in premiums and received \$3.3 billion or 3.9 times more in premiums than they received in claims. Louisiana policyholders paid \$3.9 billion in premiums and received \$16.0 billion in claims over the same period. These numbers have not been adjusted for inflation. Lack of an adjustment has little effect on within year comparisons, but may make a difference in some comparisons or aggregations over several years.

The data from **Table 1** are presented as line charts in **Figures 1** through **5**. Please note the differences in the scales of the x-axis. **Figure 1** shows the premium versus claims for Michigan. **Figure 2** shows the premium versus claims for Florida. **Figures 3** and **4** show the premiums versus claims for Louisiana; however, **Figure 4** excludes 2005, as the outlier year, to better illustrate the changes that occurred in Louisiana over the period from 1978 through 2010. **Figure 5** shows the premium-to-claims ratios for Michigan, Florida and Louisiana.

Analysis

Several interrelated points can be made.

First, although **Figure 5** shows the premium-to-claims ratios were greatest for Michigan, both Florida and Louisiana paid much more than Michigan in premiums into the NFIP from 1978 to 2010. Michigan paid \$284.4 million in premiums versus \$14.1 billion for Florida and \$3.9 billion for Louisiana. The ratio only shows premiums relative to claims in a state over a particular time period.

Second, Congress did not set up the NFIP solely on principles of actuarial soundness. FEMA has a pricing policy or goal of collecting sufficient revenue each year to at least meet the expected losses of an average historical loss year based on experience under the program since 1978. Operationally, the agency determines the revenue needed to meet an historical average loss year based on its current number of policies in force and its expected loss and underwriting/administrative expenses. This rate setting process has allowed for some accumulation of reserves during years when the NFIP experiences losses lower than in an average historical loss year. Although the NFIP has been able to cover losses through the premiums charged to all policyholders, total income generated from insurance premiums and investments has at times been insufficient to pay claims in heavier loss years. At these times, the program has had to borrow from the U.S. Treasury to cover losses and other expenses in the short term.

Third, the NFIP does not underwrite specific risks in its policy portfolio and, therefore, the overall premiums charged under the program are not risk based.¹ All properties with the same set of characteristics that fall within the same risk categories and flood risk zones pay the same premium rate wherever the property is located in the United States. In addition, prior claims history does not affect premium rates. In other words, the losses from a particular property does not affect the premium that is charged on that property. Therefore, it is possible for policyholders in one part of a state to cross-subsidize another part of the same state or even another state. In many ways, this risk diversification or spreading is exactly how insurance works. Insurers typically collect premiums from many policyholders, some of whom are low risk and others high risk, and pay claims for the random individuals in the risk portfolio who suffer a financial loss during the contract term.

Therefore, given these three points that reflect the current situation in the NFIP, a state such as Michigan could experience high premium-to-claims ratios, reflecting substantially more premiums paid into the program than it received in claims payments.

Information contained in this memorandum may appear in other CRS products. Please contact me at the number above or by e-mail to Rking@crs.loc.gov if I can be of further assistance.

¹ The NFIP has two general classes of properties and a corresponding system of pricing: those insured at full actuarial rates and those insured at "subsidized" rates. Congress authorized subsidized rates on buildings constructed before the effective date of a community's flood insurance rate map (FIRM) or before the application of the NFIP construction standards on December 31, 1974. Owners of "pre-FIRM" structures pay rates that are less than full actuarial rates and are exempt from the NFIP's floodplain management requirements unless the structures are either substantially improved, which triggers a requirement to rebuild to current construction and building code standards.

Table I. History of Premiums and Claims for Michigan, Florida, and Louisiana Under the National Flood Insurance Program: 1978-2010
(\$ Nominal)

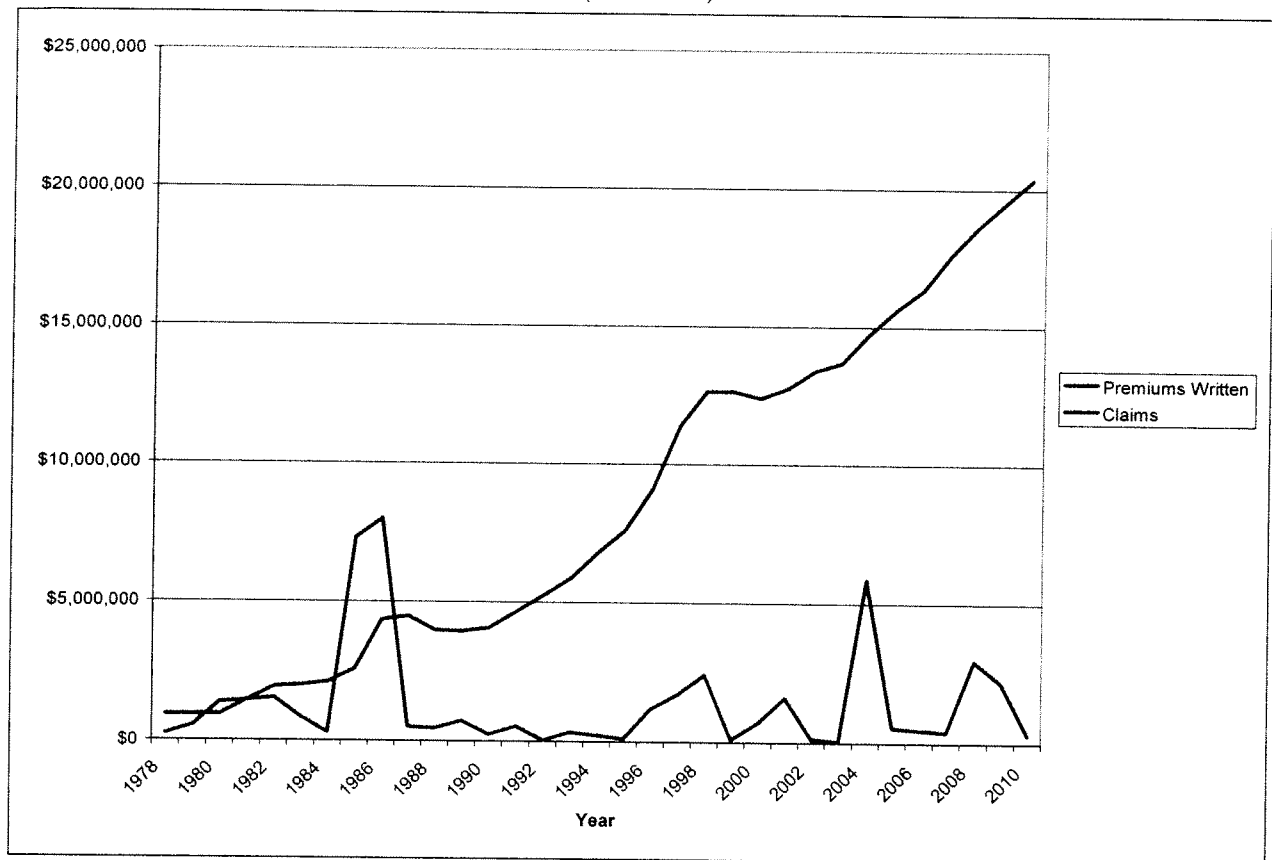
| Year | Michigan | | | Florida | | | Louisiana | | |
|------|---------------------|-------------|-------------------------------|---------------------|---------------|-------------------------------|---------------------|---------------|--------------------------------|
| | Premiums Written | Claims | Premium to Claims Ratio | Premiums Written | Claims | Premium to Claims Ratio | Premiums Written | Claims | Premiums to claims Ratio |
| 1978 | \$918,362 | \$227,078 | 4.04 | \$26,928,195 | \$789,594 | 34.10 | \$9,777,408 | \$49,309,123 | 0.20 |
| 1979 | \$930,124 | \$525,255 | 1.77 | \$37,032,345 | \$17,824,304 | 2.08 | \$12,662,968 | \$17,900,719 | 0.71 |
| 1980 | \$935,244 | \$1,352,875 | 0.69 | \$45,053,904 | \$857,824 | 52.52 | \$14,693,516 | \$108,925,178 | 0.13 |
| 1981 | \$1,435,887 | \$1,429,439 | 1.00 | \$73,699,684 | \$1,987,642 | 37.08 | \$26,093,710 | \$4,360,771 | 5.98 |
| 1982 | \$1,931,690 | \$1,524,147 | 1.27 | \$105,564,652 | \$13,141,934 | 8.03 | \$35,766,357 | \$37,157,324 | 0.96 |
| 1983 | \$1,993,340 | \$827,677 | 2.41 | \$113,508,814 | \$1,345,105 | 84.39 | \$42,177,223 | \$128,735,107 | 0.33 |
| 1984 | \$2,104,150 | \$281,913 | 7.46 | \$129,454,957 | \$4,336,916 | 29.85 | \$47,658,961 | \$9,514,048 | 5.01 |
| 1985 | \$2,571,131 | \$7,277,361 | 0.35 | \$146,884,404 | \$88,548,140 | 1.66 | \$49,995,095 | \$95,068,091 | 0.53 |
| 1986 | \$4,346,207 | \$7,978,835 | 0.54 | \$171,732,167 | \$1,941,551 | 88.45 | \$54,651,354 | \$1,918,555 | 28.49 |
| 1987 | \$4,481,821 | \$491,802 | 9.11 | \$194,729,333 | \$1,420,591 | 137.08 | \$57,246,888 | \$5,648,224 | 10.14 |
| 1988 | \$3,977,848 | \$449,971 | 8.84 | \$209,142,971 | \$1,957,444 | 17.49 | \$60,231,789 | \$19,439,066 | 3.10 |
| 1989 | \$3,952,096 | \$716,129 | 5.52 | \$227,132,746 | \$1,896,580 | 119.76 | \$62,577,214 | \$74,432,959 | 0.84 |
| 1990 | \$4,075,412 | \$223,451 | 18.24 | \$240,632,560 | \$1,559,198 | 154.33 | \$63,470,964 | \$27,574,127 | 2.30 |
| 1991 | \$4,664,387 | \$525,219 | 8.88 | \$261,604,584 | \$9,973,629 | 26.23 | \$70,081,885 | \$75,052,741 | 0.93 |
| 1992 | \$5,259,295 | \$31,948 | 164.62 | \$282,773,820 | \$158,199,868 | 1.79 | \$72,985,803 | \$33,711,617 | 2.17 |
| 1993 | \$5,864,504 | \$320,076 | 18.32 | \$321,958,439 | \$200,186,791 | 1.61 | \$75,654,346 | \$25,683,666 | 2.95 |
| 1994 | \$6,796,584 | \$218,778 | 31.07 | \$371,097,161 | \$19,809,251 | 18.73 | \$82,348,331 | \$8,860,471 | 9.29 |
| 1995 | \$7,600,985 | \$96,150 | 79.05 | \$427,333,119 | \$421,963,592 | 1.01 | \$93,626,802 | \$606,974,301 | 0.15 |
| 1996 | \$9,064,784 | \$1,159,216 | 7.82 | \$481,066,304 | \$105,329,119 | 4.57 | \$103,266,658 | \$6,051,049 | 17.07 |
| 1997 | \$11,374,706 | \$1,692,293 | 6.72 | \$537,236,601 | \$12,101,397 | 44.39 | \$121,415,995 | \$22,632,122 | 5.36 |
| 1998 | \$12,630,717 | \$2,413,730 | 5.23 | \$589,088,363 | \$101,761,356 | 5.79 | \$135,399,687 | \$78,200,656 | 1.73 |

| Year | Michigan | | | Florida | | | Louisiana | | |
|--------------------|---------------------|--------------|-------------------------------|---------------------|-----------------|-------------------------------|---------------------|------------------|--------------------------------|
| | Premiums Written | Claims | Premium to Claims Ratio | Premiums Written | Claims | Premium to Claims Ratio | Premiums Written | Claims | Premiums to claims Ratio |
| 1999 | \$12,631,977 | \$86,191 | 146.56 | \$597,358,366 | \$137,911,148 | 4.33 | \$142,878,721 | \$14,723,365 | 9.70 |
| 2000 | \$12,388,124 | \$698,877 | 17.73 | \$594,973,591 | \$166,664,170 | 3.57 | \$145,497,899 | \$2,118,106 | 68.69 |
| 2001 | \$12,744,388 | \$1,589,942 | 8.02 | \$588,794,524 | \$45,368,737 | 12.98 | \$150,788,519 | \$103,402,580 | 1.46 |
| 2002 | \$13,375,605 | \$118,701 | 112.68 | \$604,179,174 | \$8,376,332 | 72.13 | \$158,540,916 | \$133,214,616 | 1.19 |
| 2003 | \$13,665,720 | \$43,143 | 316.76 | \$634,054,482 | \$14,005,229 | 45.27 | \$166,585,706 | \$11,907,641 | 13.99 |
| 2004 | \$14,718,744 | \$5,863,066 | 2.51 | \$678,709,521 | \$1,268,493,240 | 0.54 | \$175,874,288 | \$32,225,670 | 5.46 |
| 2005 | \$15,605,376 | \$543,552 | 28.71 | \$749,994,722 | \$628,452,207 | 1.19 | \$191,310,984 | \$13,779,450,209 | 0.01 |
| 2006 | \$16,329,628 | \$463,916 | 35.20 | \$851,681,864 | \$10,491,493 | 81.18 | \$264,334,581 | \$22,927,826 | 11.53 |
| 2007 | \$17,580,612 | \$395,204 | 44.48 | \$909,800,468 | \$7,094,696 | 128.24 | \$290,153,743 | \$5,664,655 | 51.22 |
| 2008 | \$18,607,309 | \$2,951,850 | 6.30 | \$957,364,087 | \$62,158,097 | 15.40 | \$299,832,302 | \$449,139,741 | 0.67 |
| 2009 | \$19,477,527 | \$2,159,588 | 9.02 | \$968,917,337 | \$71,796,125 | 13.50 | \$311,444,125 | \$37,829,345 | 8.23 |
| 2010 | \$20,336,611 | \$301,464 | 67.46 | \$992,752,040 | \$4,001,362 | 248.10 | \$326,537,368 | \$2,973,198 | 109.83 |
| Total ^a | \$284,370,895 | \$44,978,837 | 6.32 | \$14,122,235,299 | \$3,601,744,659 | 3.92 | \$3,915,562,106 | \$16,032,726,865 | 0.24 |

Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

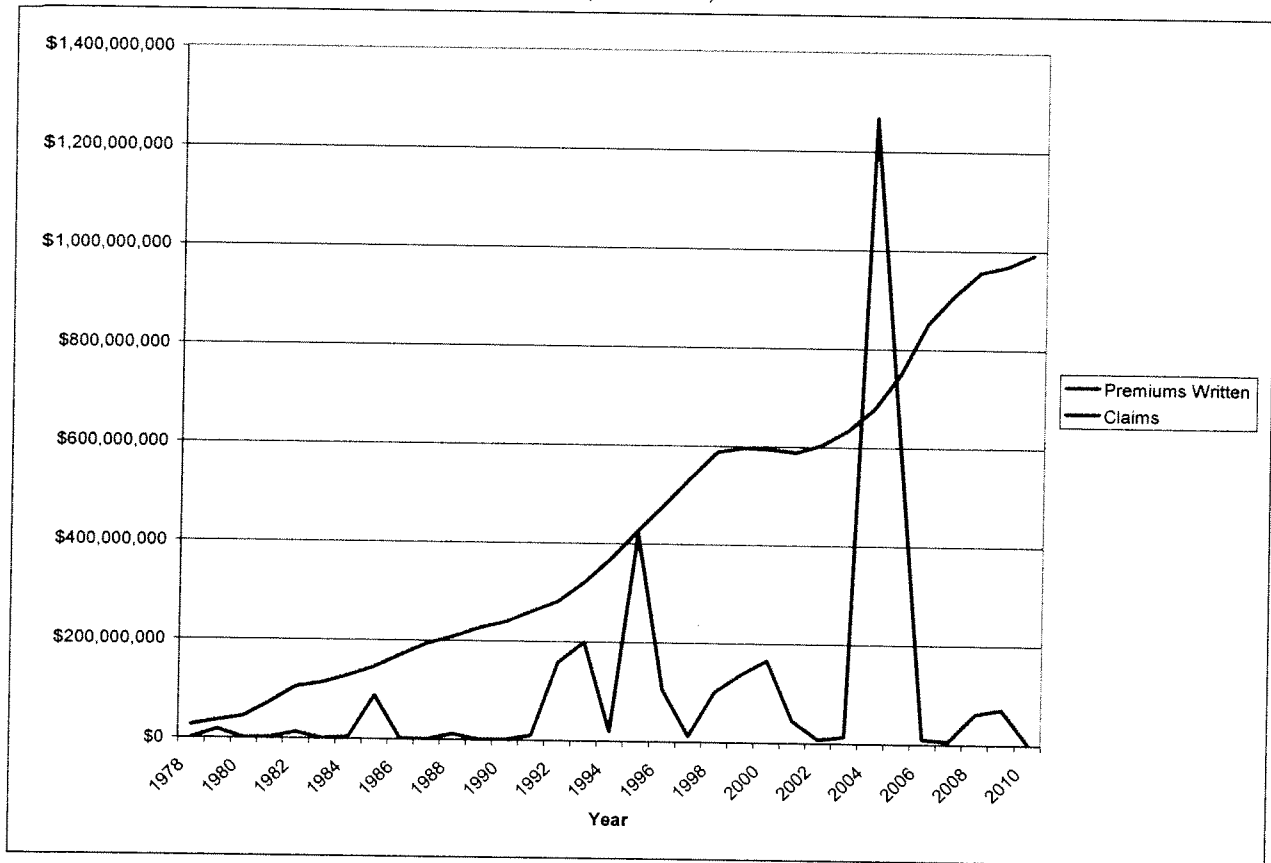
Note: ^a These numbers could be considered misleading as they are in nominal dollars aggregated from 1978 through 2010.

Figure 1. National Flood Insurance Program Premiums Written Versus Claims for Michigan (1978-2010)



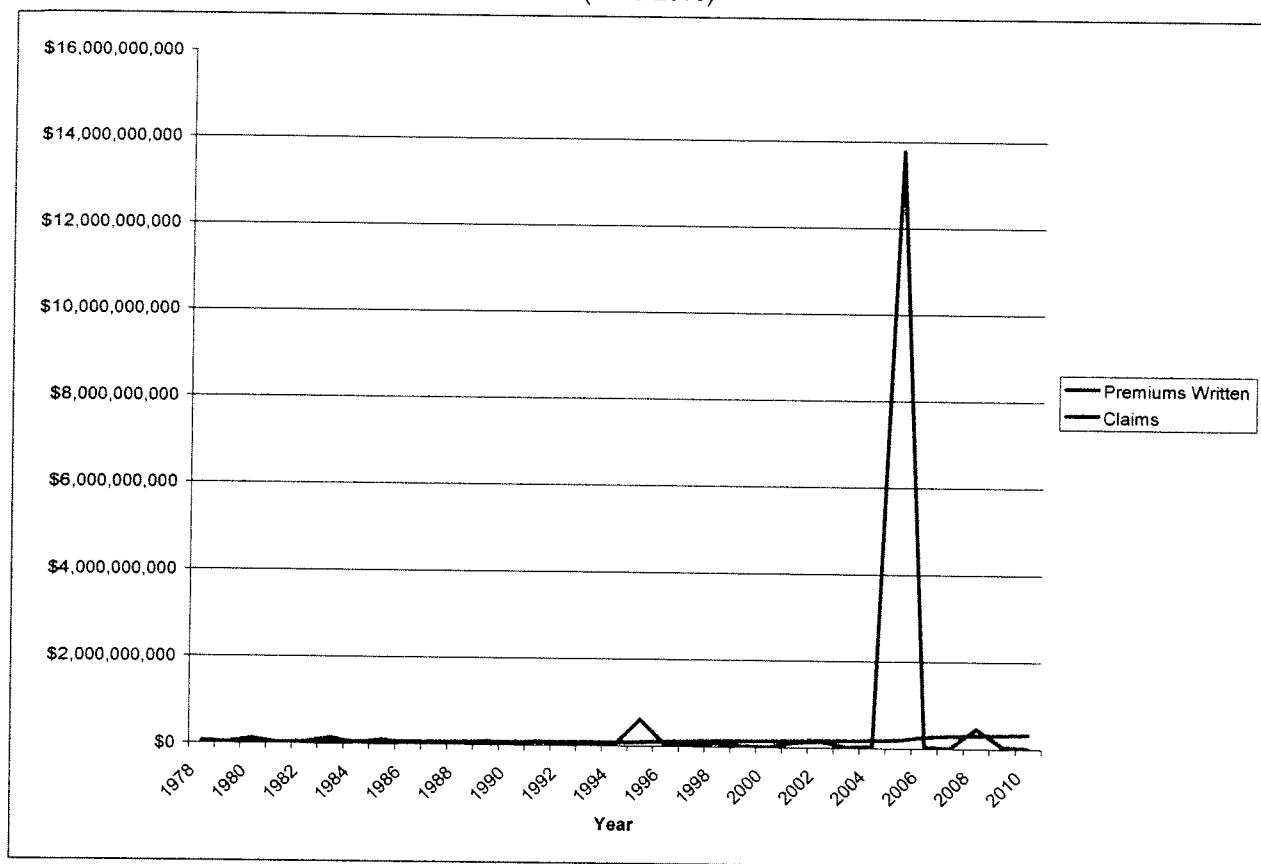
Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

Figure 2. National Flood Insurance Program Premiums Written Versus Claims for Florida (1978-2010)



Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

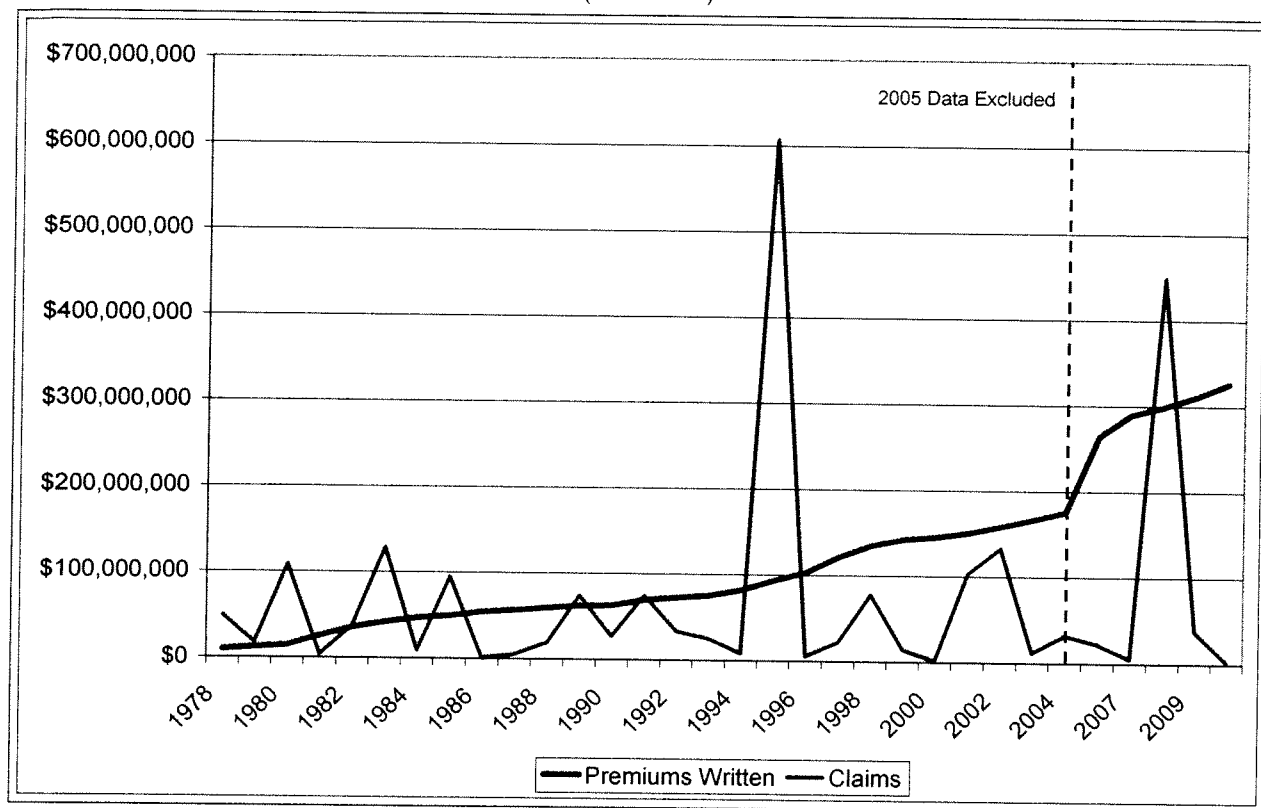
Figure 3. National Flood Insurance Program Premiums Written Versus Claims for Louisiana, Including 2005 Data
(1978-2010)



Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

Notes: Figure includes 2005 data.

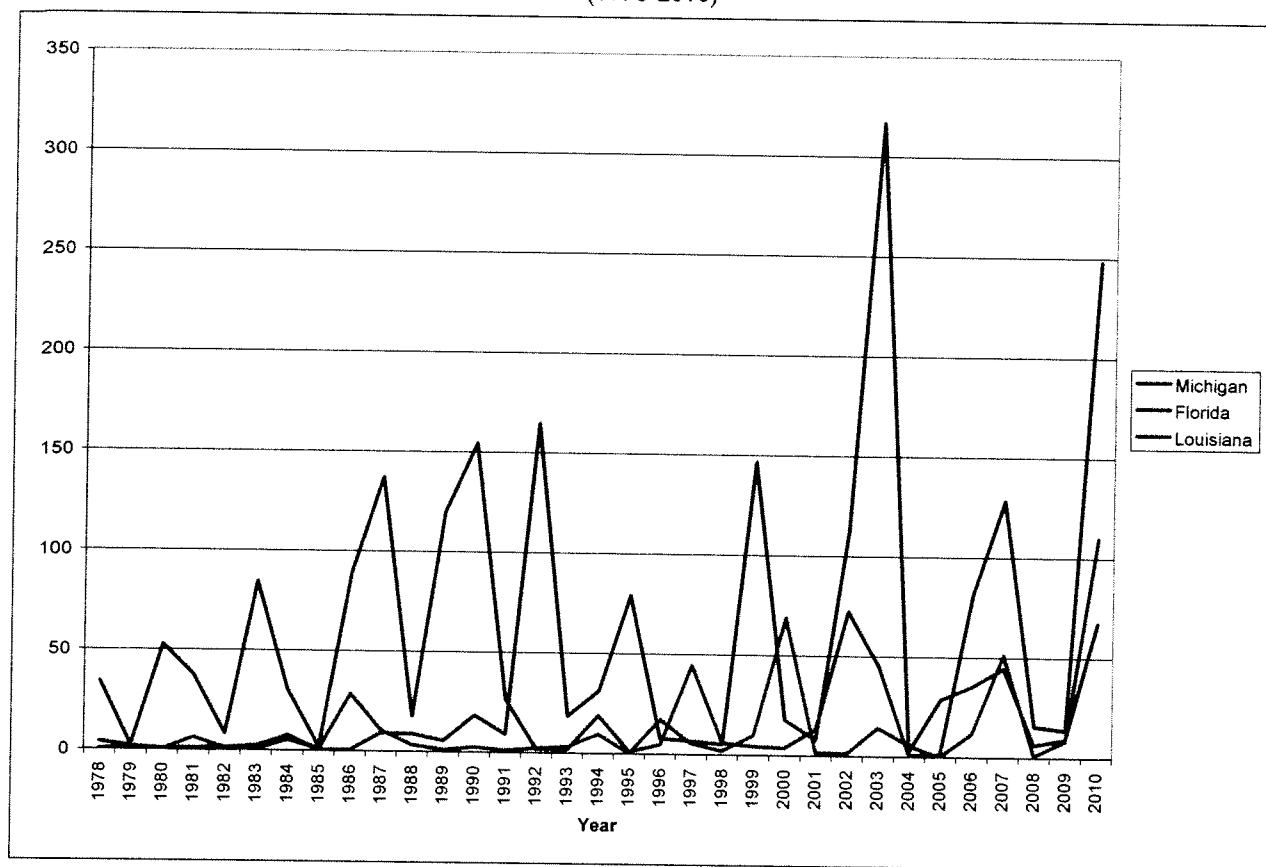
Figure 4. National Flood Insurance Program Premiums Written Versus Claims for Louisiana, Excluding 2005 Data
(1978-2010)



Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

Notes: Figure excludes 2005 to better illustrate changes over the 1978-2010 period.

Figure 5. Ratio of Premiums to Claims Under the National Flood Insurance Program for Michigan, Florida, and Louisiana (1978-2010)



Source: Department of Homeland Security, Federal Emergency Management Agency, Office of External Affairs, Legislative Affairs Division.

Notes: Figure includes 2005 data.